



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0332; Project Identifier AD-2020-01414-T]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 787-8 and 787-9 airplanes. This proposed AD was prompted by reports that shimming requirements were not met during the assembly of certain structural joints, which can result in reduced fatigue thresholds of the affected structural joints. This proposed AD would require repetitive inspections for cracking of certain areas of the front spar pickle fork and front spar outer chord and repair of any cracking found. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0332.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0332; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Greg Rutar, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3529; email: [Greg.Rutar@faa.gov](mailto:Greg.Rutar@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include

“Docket No. FAA-2021-0332; Project Identifier AD-2020-01414-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR § 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this proposed AD.

#### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Greg Rutar, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3529; email: [Greg.Rutar@faa.gov](mailto:Greg.Rutar@faa.gov). Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

The FAA has received reports that shimming requirements were not met during the assembly of certain areas of the front spar pickle fork and front spar outer chord structural joints, which can result in reduced fatigue thresholds of the affected structural joints. The existing inspection program does not adequately detect this fatigue cracking. The affected locations are common to the front spar pickle fork, between stringer S-22 and stringer S-25, and the front spar body chord, between stringer S-25 and buttock line (BL) 0', on the left and right sides. Not meeting the shimming requirements during assembly of the station (STA) 873 front spar pickle fork and front spar body chord structure joints results in excessive pull-up forces, fastener shanking, excessive burr heights in metallic members, and metallic chips (foreign object debris) in fastened interfaces, which all degrade fatigue performance of any affected structural joints.

Undetected fatigue cracking could weaken primary structure so it cannot sustain limit load, which could result in reduced structural integrity of the airplane.

## **Related Service Information under 1 CFR Part 51**

The FAA reviewed Boeing Alert Requirements Bulletin B787-81205-SB530075-00 RB, Issue 001, dated September 8, 2020. The service information describes procedures for repetitive high frequency eddy current (HFEC) inspections for cracking around all the fasteners common to the front spar pickle fork outer chord surface between stringer S-22 and stringer S-24 at STA 873 on the left and right sides, and along the entire forward edge of the front spar pickle fork outer chord covered by the body chord splice angle between stringer S-24 and stringer S-25 at STA 873 on the left and right sides, and repair of any cracking found. The service information also describes procedures for repetitive ultrasonic (UT) inspections for cracking of the front spar pickle fork outer chord along the upper, lower and aft edges of

the end fittings at stringer S-23 at STA 873, on the left and right sides, and repair of any cracking found.

The FAA also reviewed Boeing Alert Requirements Bulletin B787-81205-SB530076-00 RB, Issue 001, dated September 8, 2020. The service information describes procedures for repetitive HFEC inspections for cracking along the entire forward edge of the front spar body chord in the area covered by the body chord splice angle at stringer S-25 on the left and right sides, and the splice fitting at BL 0', STA 873, and repair of any cracking found. The service information also describes procedures for repetitive detailed inspections of the front spar body chord horizontal flange surface between stringer S-26 to stringer S-40 at STA 873 on the left and right sides and repair of any cracking found. The service information also describes procedures for repetitive UT inspections for cracking of the of the front spar body chord horizontal flange along the upper and lower edges of the end fittings at stringer S-27, at STA 873 on the left and right sides, and repair of any cracking found.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **FAA's Determination**

The FAA is proposing this AD because the agency evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

#### **Proposed AD Requirements**

This proposed AD would require accomplishment of the actions identified in Boeing Alert Requirements Bulletins B787-81205-SB530075-00 RB and B787-81205-SB530076-00 RB, both Issue 001, both dated September 8, 2020, described

previously, except for any differences identified as exceptions in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0332.

### **Explanation of Requirements Bulletin**

The FAA worked in conjunction with industry, under the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC), to enhance the AD system. One enhancement is a process for annotating which steps in the service information are “required for compliance” (RC) with an AD. Boeing has implemented this RC concept into Boeing service bulletins.

In an effort to further improve the quality of ADs and AD-related Boeing service information, a joint process improvement initiative was worked between the FAA and Boeing. The initiative resulted in the development of a new process in which the service information more clearly identifies the actions needed to address the unsafe condition in the “Accomplishment Instructions.” The new process results in a Boeing Requirements Bulletin, which contains only the actions needed to address the unsafe condition (i.e., only the RC actions).

### **Costs of Compliance**

The FAA estimates that this proposed AD affects 79 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

#### **Estimated costs for required actions**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Repetitive inspections	14 work-hours X \$85 per hour = \$1,190 per inspection cycle	\$0	\$1,190 per inspection cycle	\$94,010 per inspection cycle

The FAA has received no definitive data on which to base the cost estimates for the on-condition repairs specified in this proposed AD.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**The Boeing Company:** Docket No. FAA-2021-0332; Project Identifier

AD-2020-01414-T.

#### **(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to The Boeing Company Model 787-8 and 787-9 airplanes, certificated in any category, as identified in Boeing Alert Requirements Bulletin B787-81205-SB530075-00 RB, Issue 001, dated September 8, 2020.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 53, Fuselage.

#### **(e) Unsafe Condition**

This AD was prompted by reports that shimming requirements were not met during the assembly of certain areas of the front spar pickle fork and front spar outer



chord structural joints, which can result in reduced fatigue thresholds of the affected structural joints. The FAA is issuing this AD to address undetected fatigue cracking, which could weaken primary structure so it cannot sustain limit load, and could result in reduced structural integrity of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

Except as specified by paragraph (h) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletins B787-81205-SB530075-00 RB and B787-81205-SB530076-00 RB, both Issue 001, both dated September 8, 2020, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletins B787-81205-SB530075-00 RB and B787-81205-SB530076-00 RB, both Issue 001, both dated September 8, 2020.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletins B787-81205-SB530075-00 and B787-81205-SB530076-00, both Issue 001, dated both September 8, 2020, which are referred to in Boeing Alert Requirements Bulletins B787-81205-SB530075-00 RB and B787-81205-SB530076-00 RB, both Issue 001, both dated September 8, 2020.

**(h) Exceptions to Service Information Specifications**

(1) Where Boeing Alert Requirements Bulletin B787-81205-SB530076-00 RB, Issue 001, dated September 8, 2020, uses the phrase “the issue 001 date of the Requirements Bulletin B787-81205-SB530076-00 RB,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Requirements Bulletins B787-81205-SB530075-00 RB and B787-81205-SB530076-00 RB, both Issue 001, both dated September 8, 2020,

specify contacting Boeing for repair instructions: This AD requires doing the repair using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to:

9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(j) Related Information**

(1) For more information about this AD, contact Greg Rutar, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3529; email: Greg.Rutar@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd.,

MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on April 16, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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